

D-2885CIP



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PATENT

In re application of: )  
Steward et al. )  
Serial No. 09/910,346 )  
Filed: July 20, 2001 )  
For: LEUCINE-BASED MOTIF AND )  
CLOSTRIDIAL NEUROTOXINS )  
)  
)  
)

---

ENTRY OF SEQUENCE LISTING

Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Attached is the "Sequence Listing" which complies with the requirements of 37 CFR 1.821-1.825, for the above-identified application, in computer readable form (CRF) and paper form. The contents of the paper and computer readable copies are the same and include no new matter.

Respectfully submitted,

Jean F. Heuler  
Office of Frank J. Uxa  
Stout, Uxa, Buyan & Mullins LLP  
4 Venture, Suite 300  
Irvine, CA 92618  
(949) 450-1750  
Facsimile (949) 450-1764



## SEQUENCE LISTING

<110> STEWARD, LANCE E  
FERNANDEZ-SALAS, ESTER  
HERRINGTON, TODD M  
AOKI, KEI R

<120> Leucine-based motif and clostridial neurotoxins

<130> D-2885CIP

<150> US 09/620,840

<151> 2000-07-21

<160> 20

<170> PatentIn version 3.1

<210> 1

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having prop  
erties su

bstantially similar to that of leucine based sequence

x may be any amino acid or derivatives thereof

<400> 1

Xaa Asp Xaa Xaa Xaa Leu Leu

1

5

<210> 2

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having prop  
erties su

bstantially similar to leucine based motif

x may be any amino acid or derivatives thereof

<400> 2

Xaa Glu Xaa Xaa Xaa Leu Leu  
1 5

<210> 3

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having prop  
erties su  
bstantially similar to that of leucine based motif

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

<400> 3

Xaa Asp Xaa Xaa Xaa Leu Ile  
1 5

<210> 4

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having prop  
erties su  
bstantially similar to that of leucine based motif

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

<400> 4

Xaa Asp Xaa Xaa Xaa Leu Met  
1 5

<210> 5

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Artificial Sequence: fragment having properties substantially similar to leucine based motif

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

<400> 5

Xaa Glu Xaa Xaa Xaa Leu Ile  
1 5

<210> 6

<211> 7

<212> PRT

<213> Artificial

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> Description of Unknown Organism: This fragment may have come from a rat source.

<220>

<221> MISC\_FEATURE

<222> (1)..(5)

<223> X may be any amino acid or derivatives thereof

<400> 6

Xaa Glu Xaa Xaa Xaa Leu Met  
1 5

<210> 7  
<211> 7  
<212> PRT  
<213> Unknown

<220>

<223> Description of Unknown Organism: This fragment may have  
come from  
a rat source.

<400> 7

Phe Glu Phe Tyr Lys Leu Leu  
1 5

<210> 8  
<211> 7  
<212> PRT  
<213> rat

<400> 8

Glu Glu Lys Arg Ala Ile Leu  
1 5

<210> 9  
<211> 7  
<212> PRT  
<213> rat

<400> 9

Glu Glu Lys Met Ala Ile Leu  
1 5

<210> 10  
<211> 7  
<212> PRT  
<213> rat

<400> 10

Ser Glu Arg Asp Val Leu Leu  
1 5

<210> 11

<211> 7  
<212> PRT  
<213> rat

<400> 11

Val Asp Thr Gln Val Leu Leu  
1 5

<210> 12  
<211> 7  
<212> PRT  
<213> mouse

<400> 12

Ala Glu Val Gln Ala Leu Leu  
1 5

<210> 13  
<211> 7  
<212> PRT  
<213> frog

<400> 13

Ser Asp Lys Gln Asn Leu Leu  
1 5

<210> 14  
<211> 7  
<212> PRT  
<213> chicken

<400> 14

Ser Asp Arg Gln Asn Leu Ile  
1 5

<210> 15  
<211> 7  
<212> PRT  
<213> sheep

<400> 15

Ala Asp Thr Gln Val Leu Met  
1 5

<210> 16  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 16

Ser Asp Lys Gln Thr Leu Leu  
 1 5

<210> 17  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 17

Ser Gln Ile Lys Arg Leu Leu  
 1 5

<210> 18  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 18

Ala Asp Thr Gln Ala Leu Leu  
 1 5

<210> 19  
 <211> 437  
 <212> PRT  
 <213> Clostridium botulinum

<400> 19

Pro Phe Val Asn Lys Gln Phe Asn Tyr Lys Asp Pro Val Asn Gly Val  
 1 5 10 15

Asp Ile Ala Tyr Ile Lys Ile Pro Asn Val Gly Gln Met Gln Pro Val  
 20 25 30

Lys Ala Phe Lys Ile His Asn Lys Ile Trp Val Ile Pro Glu Arg Asp

35

40

45

Thr Phe Thr Asn Pro Glu Glu Gly Asp Leu Asn Pro Pro Pro Glu Ala

50

55

60

Lys Gln Val Pro Val Ser Tyr Tyr Asp Ser Thr Tyr Leu Ser Thr Asp

65

70

75

80

Asn Glu Lys Asp Asn Tyr Leu Lys Gly Val Thr Lys Leu Phe Glu Arg

85

90

95

Ile Tyr Ser Thr Asp Leu Gly Arg Met Leu Leu Thr Ser Ile Val Arg

100

105

110

Gly Ile Pro Phe Trp Gly Gly Ser Thr Ile Asp Thr Glu Leu Lys Val

115

120

125

Ile Asp Thr Asn Cys Ile Asn Val Ile Gln Pro Asp Gly Ser Tyr Arg

130

135

140

Ser Glu Glu Leu Asn Leu Val Ile Ile Gly Pro Ser Ala Asp Ile Ile

145

150

155

160

Gln Phe Glu Cys Lys Ser Phe Gly His Glu Val Leu Asn Leu Thr Arg



165 170 175  
Asn Gly Tyr Gly Ser Thr Gln Tyr Ile Arg Phe Ser Pro Asp Phe Thr  
180 185 190  
Phe Gly Phe Glu Glu Ser Leu Glu Val Asp Thr Asn Pro Leu Leu Gly  
195 200 205  
Ala Gly Lys Phe Ala Thr Asp Pro Ala Val Thr Leu Ala His Glu Leu  
210 215 220  
Ile His Ala Gly His Arg Leu Tyr Gly Ile Ala Ile Asn Pro Asn Arg  
225 230 235 240  
Val Phe Lys Val Asn Thr Asn Ala Tyr Tyr Glu Met Ser Gly Leu Glu  
245 250 255  
Val Ser Phe Glu Glu Leu Arg Thr Phe Gly Gly His Asp Ala Lys Phe  
260 265 270  
Ile Asp Ser Leu Gln Glu Asn Glu Phe Arg Leu Tyr Tyr Tyr Asn Lys  
275 280 285  
Phe Lys Asp Ile Ala Ser Thr Leu Asn Lys Ala Lys Ser Ile Val Gly  
290 295 300

Thr Thr Ala Ser Leu Gln Tyr Met Lys Asn Val Phe Lys Glu Lys Tyr  
305 310 315 320

Leu Leu Ser Glu Asp Thr Ser Gly Lys Phe Ser Val Asp Lys Leu Lys  
325 330 335

Phe Asp Lys Leu Tyr Lys Met Leu Thr Glu Ile Tyr Thr Glu Asp Asn  
340 345 350

Phe Val Lys Phe Phe Lys Val Leu Asn Arg Lys Thr Tyr Leu Asn Phe  
355 360 365

Asp Lys Ala Val Phe Lys Ile Asn Ile Val Pro Lys Val Asn Tyr Thr  
370 375 380

Ile Tyr Asp Gly Phe Asn Leu Arg Asn Thr Asn Leu Ala Ala Asn Phe  
385 390 395 400

Asn Gly Gln Asn Thr Glu Ile Asn Asn Met Asn Phe Thr Lys Leu Lys  
405 410 415

Asn Phe Thr Gly Leu Phe Glu Phe Tyr Lys Leu Leu Cys Val Arg Gly  
420 425 430

Ile Ile Thr Ser Lys  
435

<210> 20  
<211> 441  
<212> PRT  
<213> Clostridium botulinum

<400> 20

Met Pro Val Thr Ile Asn Asn Phe Asn Tyr Asn Asp Pro Ile Asp Asn  
1 5 10 15

Asn Asn Ile Ile Met Met Glu Pro Pro Phe Ala Arg Gly Thr Gly Arg  
20 25 30

Tyr Tyr Lys Ala Phe Lys Ile Thr Asp Arg Ile Trp Ile Ile Pro Glu  
35 40 45

Arg Tyr Thr Phe Gly Tyr Lys Pro Glu Asp Phe Asn Lys Ser Ser Gly  
50 55 60

Ile Phe Asn Arg Asp Val Cys Glu Tyr Tyr Asp Pro Asp Tyr Leu Asn  
65 70 75 80

Thr Asn Asp Lys Lys Asn Ile Phe Leu Gln Thr Met Ile Lys Leu Phe  
85 90 95

Asn Arg Ile Lys Ser Lys Pro Leu Gly Glu Lys Leu Leu Glu Met Ile  
100 105 110

Ile Asn Gly Ile Pro Tyr Leu Gly Asp Arg Arg Val Pro Leu Glu Glu  
115 120 125

Phe Asn Thr Asn Ile Ala Ser Val Thr Val Asn Lys Leu Ile Ser Asn

130

135

140

Pro Gly Glu Val Glu Arg Lys Lys Gly Ile Phe Ala Asn Leu Ile Ile

145

150

155

160

Phe Gly Pro Gly Pro Val Leu Asn Glu Asn Glu Thr Ile Asp Ile Gly

165

170

175

Ile Gln Asn His Phe Ala Ser Arg Glu Gly Phe Gly Gly Ile Met Gln

180

185

190

Met Lys Phe Cys Pro Glu Tyr Val Ser Val Phe Asn Asn Val Gln Glu

195

200

205

Asn Lys Gly Ala Ser Ile Phe Asn Arg Arg Gly Tyr Phe Ser Asp Pro

210

215

220

Ala Leu Ile Leu Met His Glu Leu Ile His Val Leu His Gly Leu Tyr

225

230

235

240

Gly Ile Lys Val Asp Asp Leu Pro Ile Val Pro Asn Glu Lys Lys Phe

245

250

255

Phe Met Gln Ser Thr Asp Ala Ile Gln Ala Glu Glu Leu Tyr Thr Phe

260 265 270

Gly Gly Gln Asp Pro Ser Ile Ile Thr Pro Ser Thr Asp Lys Ser Ile  
275 280 285

Tyr Asp Lys Val Leu Gln Asn Phe Arg Gly Ile Val Asp Arg Leu Asn  
290 295 300

Lys Val Leu Val Cys Ile Ser Asp Pro Asn Ile Asn Ile Asn Ile Tyr  
305 310 315 320

Lys Asn Lys Phe Lys Asp Lys Tyr Lys Phe Val Glu Asp Ser Glu Gly  
325 330 335

Lys Tyr Ser Ile Asp Val Glu Ser Phe Asp Lys Leu Tyr Lys Ser Leu  
340 345 350

Met Phe Gly Phe Thr Glu Thr Asn Ile Ala Glu Asn Tyr Lys Ile Lys  
355 360 365

Thr Arg Ala Ser Tyr Phe Ser Asp Ser Leu Pro Pro Val Lys Ile Lys  
370 375 380

Asn Leu Leu Asp Asn Glu Ile Tyr Thr Ile Glu Glu Gly Phe Asn Ile  
385 390 395 400

Ser Asp Lys Asp Met Glu Lys Glu Tyr Arg Gly Gln Asn Lys Ala Ile

405

410

415

Asn Lys Gln Ala Tyr Glu Glu Ile Ser Lys Glu His Leu Ala Val Tyr

420

425

430

Lys Ile Gln Met Cys Lys Ser Val Lys

435

440